

CLAIM AMENDMENTS

1-22 (canceled)

23. (new) A pervasive mobile data output method for rendering at an output device content at least partly accessible with an information apparatus, the information apparatus includes at least one wireless communication unit, the pervasive mobile output method comprising:

- accessing at the information apparatus at least part of said content;

- opening at the information apparatus a wireless communication channel;

- searching wirelessly at the information apparatus for wireless output devices available for wireless communication;

- receiving at the information apparatus and over the wireless communication channel at least one attribute corresponding to each wireless output device found in the search;

- selecting at the information apparatus a wireless output device found in the search based at least in part on the received attributes;

- conforming at the information apparatus at least part of the content into one or more output images;

- generating at the information apparatus an intermediate output data that includes said one or more output images, the intermediate output data conforms at least partly based on the said received attribute of the selected output device;

- establishing a wireless connection between the information apparatus and the selected wireless output device;

- transmitting the intermediate output data from the information apparatus to an output controller that is distinct from the information apparatus and associated with the selected output device, the output controller includes at least one wireless communication unit;

- converting at the output controller, the intermediate output data into an output data acceptable for rendering at the output device, and delivering the output data to the output device for rendering;

- conforming at the output device the output data into a data format that is acceptable for rendering by the rendering engine in the output device, and delivering the data format to the rendering engine for output,

whereby, the wireless information apparatus is able to output, in a mobile pervasive manner, one or more images representative of said content to an output device without the need to install an output device driver specific to that output device.

24. (new) The method of claim 23 in which establishing a wireless connection with the selected wireless output device comprises authenticating wireless access to the output device by sending over the wireless communication channel one or more of a name, a password or security code, an ID number or address, a signatures, a security keys (physical or digital), biometrics, a fingerprints, and a voice.

25. (new) The method of claim 23 in which the receiving at least one attribute over the wireless communication channel comprises receiving one or more of a device name, a device type, an address or ID number, an indication of a supported device profile, a device profile, and a security code.

26. (new) The method as of claim 23 further comprising obtaining at the information apparatus one or more rasterization parameters corresponding to the output device and related at least in part to the received device attribute from the output device or from user input.

27. (new) The method of claim 23 in which the conforming at the information apparatus at least part of the content into one or more output images includes one or more of a rasterization operation, a scaling operation, an interpolation operation, a decoding operation, an encoding operation, a filtering operation and a compression operation.

28. (new) The method of claim 23 in which the content includes one or more of a text, a graphics element data, a video data, an audio data, and an image data.

29. (new) The method of claim 23 in which the output controller is included in the output device.

30. (new) The method of claim 23 further comprising performing at the output controller one or more processing operations on the one or more output images included in the intermediate output data, the one or more processing operations including one or more of a color correction operation, a color matching operation, a color management operation, a scaling operation, an interpolation operation, a color space conversion, a compression operation, an audio processing and a halftoning operation.

31. (new) A pervasive mobile data output method for rendering content to an output device from a mobile wireless information apparatus, the content at least partly accessible with the information apparatus, the output device being a distinct device from the information and includes a wireless communication unit, the method comprising:

- opening a wireless communication channel at the information apparatus;

- searching wirelessly at the information apparatus for wireless output devices available for wireless communication;

- receiving over the wireless communication channel at least one device attribute associated with at least one available wireless output device; the attribute include at least an indication of the supported output device profile;

- selecting a wireless output device found in the search based at least in part on the received device attribute;

- conforming at the information apparatus at least part of the content into one or more device independent output images with at least one predefined or standard parameters;

- generating at the information apparatus an intermediate output data that includes said one or more output images, the intermediate output data conforms at least partly to the said supported output device profile of the selected output that is included in the said attribute of the selected output device and received over the wireless communication channel;

- establishing a point to point wireless connection between the information apparatus and the selected output device;

- delivering the intermediate output data over the wireless connection for rendering at the selected wireless output device;

decoding at the output device the intermediate output data;
converting at said output device the intermediate output data into an output data format acceptable for rendering by an output engine included in said the output device, and

sending the output data to the output engine for rendering, whereby the wireless information apparatus is able to pervasively output one or more images representative of said content to an output device without need to install an output device driver specific to that output device.

32. (new) The method of claim 31 in which establishing a wireless connection with the selected wireless output device comprises authenticating wireless access to the output device by sending over the wireless communication channel one or more of a name, a password or security code, an ID number or address, a signatures, a security keys (physical or digital), biometrics, a fingerprints, and a voice.

33. (new) The method of claim 31 in which the receiving at least one attribute over the wireless communication channel comprises receiving one or more of a device name, a device type, an address or ID number, an indication of a supported device profile, a device profile, and a security code.

34. (new) The method of claim 31 in which the intermediate output data conforms at least partly to the said at least one device attributes received over the communication channel and relating to the selected output device.

35. (new) A method of mobile wireless data output from an information apparatus with access to at least part of the content to a wireless output device by short range wireless communication, wherein the information apparatus includes at least one wireless communication unit and being a distinct device from the output device, the method comprising:

- opening a wireless communication channel;
- discovering wirelessly wireless device that is available for wireless connection;

receiving over the wireless communication channel an attribute corresponding to each wireless device found in the search, the attribute includes one or more of a name, a device type, a device address, and an indication of the supported output device profile;

selecting a wireless output device from among a list of wireless devices found in the search and based at least in part on the received attributes;

obtaining a security key at the information apparatus, the security key enabling wireless data transfer to the selected output device;

sending the security code over the wireless communication channel and requesting the selected wireless output device to open a wireless connection channel for data transfer;

receiving over the wireless communication channel a response related to the authentication; and

if the received response is positive,

establishing a wireless connection channel between the information apparatus and the selected wireless output device,

conforming, at the information apparatus, at least part of the content into an output data encoded with at least one format, the conforming relating at least in part to the said attribute received over the wireless communication channel, and transferring the output data from the information apparatus to the selected output device over said wireless connection channel for rendering,

receiving at the selected output device the output data,

performing at the selected output device at least one decoding operations on said output data, and converting the output data into an output engine data acceptable for rendering by the output engine included in the selected output device.

36. (new) The method according to claim 35 in which the information apparatus is one of a mobile phone, a digital camera, a laptop, and a PDA.

37. (new) The method according to claim 35 in which the output device is one of a printer, a projection, a copier, a speaker, an audio output device, a display screen, and a TV.

38. (new) The method of claim 35 in which discovering the one or more output devices includes one or more output devices posting their availability as discoverable and the information apparatus finding the one or more output devices.

39. (new) The method of claim 35 further comprising:

obtaining a payment information at the information apparatus, the payment information enabling data rendering service by the selected output device;

sending the payment information over the wireless communication channel and requesting the selected wireless output device to open a wireless connection channel for enabling data rendering service.

40. (new) The method of claim 35 in which the conforming, at the information apparatus, related at least in part to the supported output device profile of the selected output device and included in the said attributes received over the wireless communication channel.

41. (new) The method of claim 35 in which said security key compromises at least one of a user name, password, ID number, signatures, security keys (physical or digital), biometrics, fingerprints, and a voice.

42. (new) The method of claim 35 in which the step of obtaining the said security key comprises inputting by the user or retrieving a key that was previously stored in the information apparatus.

43. (new) The method of claim 35 further comprising:

receiving at the output device and over the wireless communication channel established a security key for authentication; comparing the received security key with an access control list stored in the output device or input by the user; and

if the step of comparing the received security key with an access control list is successful, granting the wireless information apparatus a secured wireless connection channel access to the output device.

44. (new) The method of claim 35 in which the step of obtaining the said security key comprises inputting by the user and the method further comprises:

receiving at the information apparatus and over the wireless communication channel established with the wireless output device a security key for authentication;

comparing the received security key with the security key input by the user; and

if the step of comparing the received security key is successful, granting the wireless output device a secured wireless communication connection to the information apparatus, thereby enabling a two way authentication and verification for a secured bi[^]directional wireless communication.